

ABSTRACT OF THE DISCLOSURE

[00258] A system and method is provided that employs a frequency domain interpolative CODEC system for low bit rate coding of speech which comprises a linear prediction (LP) front end adapted to process an input signal that provides LP parameters which are quantized and encoded over predetermined intervals and used to compute a LP residual signal. An open loop pitch estimator adapted to process the LP residual signal, a pitch quantizer, and a pitch interpolator and provide a pitch contour within the predetermined intervals is also provided. Also provided is a signal processor responsive to the LP residual signal and the pitch contour and adapted to perform the following: provide a voicing measure, where the voicing measure characterizes a degree of voicing of the input speech signal and is derived from several input parameters that are correlated to degrees of periodicity of the signal over the predetermined intervals; extract a prototype waveform (PW) from the LP residual and the open loop pitch contour for a number of equal sub-intervals within the predetermined intervals; normalize the PW by a gain value of the PW; encode a magnitude of the PW; and directly quantize the PW in a magnitude domain without further decomposition of the PW into complex components, where the direct quantization is performed by a hierarchical quantization method based on a voicing classification using fixed dimension vector quantizers (VQ's).